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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,921

04/02/2007

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EXAMINER

WINKLER, MELISSA A

ART UNIT

PAPER NUMBER

1796

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/580,921	<b>Applicant(s)</b> CASATI ET AL.	
	<b>Examiner</b> MELISSA WINKLER	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 8-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 13-17 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/26/06</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Objections*

**Claim 16** is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend upon any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claim has not been further treated on the merits.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claim 13** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 13 recites the limitation "the polyol." There is insufficient antecedent basis for this limitation in the claim, as it is unclear whether this limitation refers to polyol (b1) or (b2). For the purposes of further examination, "the polyol" will be assumed to refer to polyol (b2).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1 and 2** are rejected under 35 U.S.C. 102(b) as being anticipated by US 3,428,708 to Kuryla.

**Regarding Claims 1 and 2.** Kuryla teach a process for producing a polyurethane foam via the reaction of polyethers and isocyanates (Column 4, Lines 50 -52).

In Example 10D, the polyol component comprises 25 parts by weight Polyol G and 75 parts by weight Polyol D (Table I in Column 11). Polyol G is an unmodified triol with a molecular weight of 3000 and a hydroxyl number of 56. Using the equation in Column 7, its functionality can be calculated from its molecular weight and hydroxyl number. The functionality of Polyol G is therefore about 3. Polyol D is a triol capped with N,N-dimethylglycidylamine (Column 8, Lines 50 – 70). Kuryla discloses the amine-capped polyols of the invention catalyze the reaction of unmodified high molecular weight polyols with isocyanate, i.e. have an autocatalytic function (Column 1, Lines 64 - 69).

The polyol component and isocyanate are reacted in the presence of water, as a blowing agent (Example 10 D; Column 10, Lines 7 – 8; Column 6, Lines 28 – 29).

**Claims 3, 4, 7, and 14** are rejected under 35 U.S.C. 102(b) as being anticipated by US 3,428,708 to Kuryla.

**Regarding Claims 3, 4, 7, and 14.** Kuryla teach a process for producing a polyurethane foam via the reaction of polyethers and isocyanates (Column 4, Lines 50 - 52). In Example 10D, the polyol component is reacted with toluene diisocyanate (Column 11, Lines 1 -6 and Table I; Column 10, Lines 4 - 20).

The polyol component comprises 25 parts by weight Polyol G and 75 parts by weight Polyol D (Table I in Column 11). Polyol G is an unmodified triol with a molecular weight of 3000 and a hydroxyl number of 56. Using the equation in Column 7, its functionality can be calculated from its molecular weight and hydroxyl number. The functionality of Polyol G is therefore about 3. Polyol D is a triol capped with N,N-dimethylglycidylamine, also possessing a molecular weight of 3000 and a hydroxyl number of 56 (Column 8, Lines 50 – 70). It therefore also has a functionality of about 3. Kuryla discloses the amine-capped polyols of the invention catalyze the reaction of unmodified high molecular weight polyols with isocyanate, i.e. have an autocatalytic function (Column 1, Lines 64 - 69). Since both polyols have a functionality of 3 and a

hydroxyl number of 56, the average functionality and hydroxyl number of the polyol composition will also be 3 and 56, respectively.

The polyol component and isocyanate are reacted in the presence of water, as a blowing agent. Water is included in an amount of 3.5 grams per 100 grams polyol (Example 10 D; Column 10, Lines 7 – 8; Column 6, Lines 28 – 29).

**Claim 17** is rejected under 35 U.S.C. 102(b) as being anticipated by US 3,428,708 to Kuryla.

**Regarding Claim 17.** In Example 10D, Kuryla teach a polyol component comprising 25 parts by weight Polyol G and 75 parts by weight Polyol D (Table I in Column 11). Polyol G is an unmodified triol with a molecular weight of 3000 and a hydroxyl number of 56. Using the equation in Column 7, its functionality can be calculated from its molecular weight and hydroxyl number. The functionality of Polyol G is therefore about 3. Polyol D is a triol capped with N,N-dimethylglycidylamine (Column 8, Lines 50 – 70).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 5 and 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over US 3,428,708 to Kuryla, as applied to Claims 3 and 4 above, and further in view of US 2002/009338 to Haas et al.

**Regarding Claim 5.** Kuryla teaches the process of Claim 4 but does not expressly teach the blowing agent further comprises carbon dioxide added as a liquid or gas. However, Haas et al. teach a polyurethane foam prepared from a blowing agent composition which may comprise water and carbon dioxide in liquid form (Paragraph 44). Kuryla and Haas et al. are analogous art as they are from the same field of endeavor, namely polyurethane foams. At the time of invention, it would have been obvious to a person of ordinary skill in the art to add carbon dioxide in liquid form to the blowing agent composition taught by Kuryla. The motivation would have been that liquid carbon dioxide provides advantages as a blowing agent such as high solubility in the polyol component.

**Regarding Claim 6.** Kuryla teaches the process of Claim 4 but does not expressly teach the blowing agent comprises carboxylic acid. However, Haas et al. teach a polyurethane foam which may be prepared with blowing agents such as carboxylic acids, preferably in combination with water (Paragraph 44). At the time of invention, it would have been obvious to a person of ordinary skill in the art to replace the halocarbon blowing agents used in conjunction with water taught by Kuryla with carboxylic acid. The motivation would have been that carboxylic acid blowing agents provide advantages such as that they are viable alternatives to halocarbon blowing agents while avoiding the environmental damage associated with halocarbon blowing agents.

**Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over US 3,428,708 to Kuryla, as applied to Claims 3 and 7 above, and further in view of US 3,660,319 to Yeakey.

**Regarding Claim 13.** Kuryla teaches the process of Claim 7 but does not expressly teach the amine-capped polyol is prepared by methylating a polyol containing a primary amine group. However, Yeakey also teaches a method of making a tertiary amine capped compound prepared by methylating a primary amine terminated compound (Example 1). Kuryla and Yeakey are analogous art as they are



from the same field of endeavor, namely polyurethane foams prepared using catalytic tertiary amine capped compounds. At the time of invention, it would have been obvious to a person of ordinary skill in the art to prepare the tertiary amine capped polyether taught by Kuryla by using the method taught by Yeakey. The motivation would have been that the method taught by Yeakey would avoid the use of the glycidylamine compounds required by Kuryla that are often very viscous and therefore difficult to use.

**Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over US 3,428,708 to Kuryla, as applied to Claim 3 above, and further in view of US 4,517,313 to Nakatani.

**Regarding Claim 15.** Kuryla teaches the process of Claim 3 but does not expressly teach preparing the foam with an integral skin. However, Nakatani also teaches a method of making a polyurethane foam which may be prepared with an integral skin. In this method, a polyurethane resin solution is coated inside of a mold to provide a skin. Then, the polyurethane foaming mixture is charged in the mold. The skin is transferred to the foam at the time of demolding (Column 4, Lines 56 - 68). Kuryla and Nakatani are analogous art as they are from the same field of endeavor, namely polyurethane foams. At the time of invention, it would have been obvious to a

person of ordinary skill in the art to prepare the foam taught by Kuryla as an integral skin polyurethane foam. The motivation would have been that preparing the foam taught by Kuryla as an integral skin foam would diversify its potential applications to areas such as interior trim and shoe soles.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**Claims 1 – 3** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claim 1 of copending Application No. 10/589,516 in view of US 3,428,708 to Kuryla. Although the claims are not identical, they are obvious variations upon each other.

This is a provisional obviousness-type double patenting rejection.

**Regarding Claims 1 - 3.** Instant Claims 1 - 3 correspond to Claim 1 of Application No. 10/589,516. Although Application No. 10/589,516 does not expressly teach the autocatalytic polyol having a tertiary amine group is end-capped with this group, this limitation is taught by Kuryla (Column 4, Lines 50 - 74). At the time of invention, it would have been obvious to a person of ordinary skill in the art to end-cap

the polyol in Application No. 10/589,516 with the tertiary amine group. The motivation would have been that doing so would enhance the reactivity of the polyol.

**Claims 1 – 3** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claim 1 of copending Application No. 11/665,409 in view of US 3,428,708 to Kuryla. Although the claims are not identical, they are obvious variations upon each other.

This is a provisional obviousness-type double patenting rejection.

**Regarding Claims 1 - 3.** Instant Claims 1 - 3 correspond to Claim 1 of Application No. 11/665,409. Although Application No. 11/665,409 does not expressly teach the autocatalytic polyol having a tertiary amine group is end-capped with this group, this limitation is taught by Kuryla (Column 4, Lines 50 - 74). At the time of invention, it would have been obvious to a person of ordinary skill in the art to end-cap the polyol in Application No. 11/665,409 with the tertiary amine group. The motivation would have been that doing so would enhance the reactivity of the polyol.

*Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELISSA WINKLER whose telephone number is (571)270-3305. The examiner can normally be reached on Monday - Friday 7:30AM - 5PM E.S.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/  
Supervisory Patent Examiner, Art Unit 1796

MW  
November 6, 2008